Moving Innovation and Technology Forward

Governor's Council on
Innovation and Technology

Recommendations

December 2003

Strategic Themes

- Build on Arizona's Core Competencies
- Investment vs. Expenditure
- Collaboration and Partnership – Engagement
- Accountability – measurements; shared responsibility
- Leadership and Commitment – public and private

Technology Business Infrastructure

Objective

Address the infrastructure needs that support the development and competitiveness of Arizona's technology industries as well as the application of technology to traditional and emerging businesses.

1. How do we help existing Arizona technology companies grow and prosper?

2. What do we need to do to keep existing technology companies in Arizona?

3. What would entice technology companies to expand their Arizona operations?

4. What is needed to recruit technology companies to Arizona?

Technology Business Infrastructure Committee Members

Pat Stoner, Chair, Stoner-Roland, LLC

Cory Miller, Arizona AeA
Adriane Brown, Honeywell
Chris Cummiskey, GITA
Michael Fong, Calence
Bob Hagen, Southern Arizona Tech Council
Dick Hayslip, Salt River Project
Gilbert Jimenez, Arizona Department of Commerce
Ed Koopman, Boeing
Richard Pieranunzi, STMicroelectronics, Inc.
Wendy Vittori, Motorola Computer Group

Industry Focus

1. Established

Aerospace

Semiconductor/Electronics

2. Expanding

Advanced Manufacturing

Communications/Information Technology

Optics

3. Emerging

Bioscience

Sustainable Systems

Retention & Growth of Existing Technology Companies

- Enhance Private/Public Sector Core Competencies
- Explore Technology Opportunities in the CANAMEX Corridor
  - AZ/Mexico Manufacturing Program
- Improve Industry Alliances to Strengthen Competitiveness
- Enhance Arizona's Supply Chain Development Program

Favorable Business Environment

- Invest in a Strong & Robust ADOC Empowered to Champion Recommendations
- Improve Arizona's Tax Structure to Encourage Investment in Innovation & Technology Development
- Improve Relationship With Federal, State & Local Policy Makers
- Develop & Target Business Incentives to Attract, Grow & Retain Knowledge Based Industries

Knowledge Industry Brand Development and Awareness

Brand Arizona as a Global Leader in Discovery, Innovation and New Technology Development

Education and Knowledge Worker Development

- Support ongoing efforts to enhance the P-20 Curriculum, with emphasis on K-12
- Restore/Preserve Funding for Arizona Job Training Program
- Collaborate with Governor's Council on Workforce Policy
- Revise IT Training Tax Credit Programs
- Develop Programs that Retain New Graduates in the State
- Establish Intern Programs
- Explore Workforce and Training Opportunities with Broad and Diverse Communities

Other Areas of Focus

- Commercialization & Entrepreneurial Assistance
- Federal Leadership & Funding Opportunities
  - Identify & Facilitate Access to Federal Funding Programs
  - Establish an Arizona Office in D.C.
  - Explore Federal Lab potential
- Telecommunications Infrastructure Development

Technology Commercialization

Evaluate technology commercialization in Arizona and develop recommendations that enhance its transformation from research to development: the creation of innovation, its development to practical use, and its transfer to companies within the state and to others that benefit the state.

Technology Commercialization Committee Members

Nina Ossanna, Chair, ImaRx Therapeutics
Bill Hardin, Co-Chair, Osborn Maledon

Jonathan Fink, Arizona State University
Carl Fox, Northern Arizona University
Tom Grogan, Ventana Medical
Bob Hagen, Southern Arizona Tech Council
Bruce Wright, University of Arizona
Patrick Jones, University of Arizona
Michael Kozicki, Arizona State University
Peter Slate, Arizona Technology Enterprises

Jeff Trent, TGen
Colleen Brophy, ASU
Eve Ross, W.L. Gore
Barry Soloway
David Johns, W.L. Gore
Dan O'Neill, DJT Enterprises
Dick Powell, University of Arizona

Vehicles of Technology Commercialization

- Create spin-outs or start-up companies from university technology
- License university technology to existing companies
- Make available unique university equipment and resources to companies

Equity Bill & Amendment

- Governor introduced constitutional amendment and legislation to allow Arizona universities to take equity as consideration for licensing.
  - Allows start-up companies to leverage cash
  - Allows universities to benefit in addition to royalties
- Bill has been signed, but Arizona voters must vote to amend the constitution.
- Priority to assure passage of constitutional amendment.

University Culture

- Support the continuing evolution of University culture to emphasize innovation.
- Effect through incentivization, education and communication.
- Arizona Innovation Scholar Program

Promote Interaction Between Universities and Private Sector

Better educate private sector:

- University shared resource opportunities
- Research programs
- Technology available for licensing
- Annual “showcase” events
- Increase focus on “demand pull” research initiatives

Also, educate university community on private sector endeavors & opportunities for collaboration.

- Technopolis
- UA Innovation Center

Increase Partnership Between Universities & Economic Development

Recognize that university technology commercialization is a viable component of economic development in our state and communities.

Strengthen ties and improve communication:

- State & local economic development agencies
- Private Sector economic development organizations

Capital Formation

Mission:

Evaluate capital formation in Arizona and develop recommendations that support Arizona's global competitiveness in the 21st Century.

Capital Formation - Committee Members

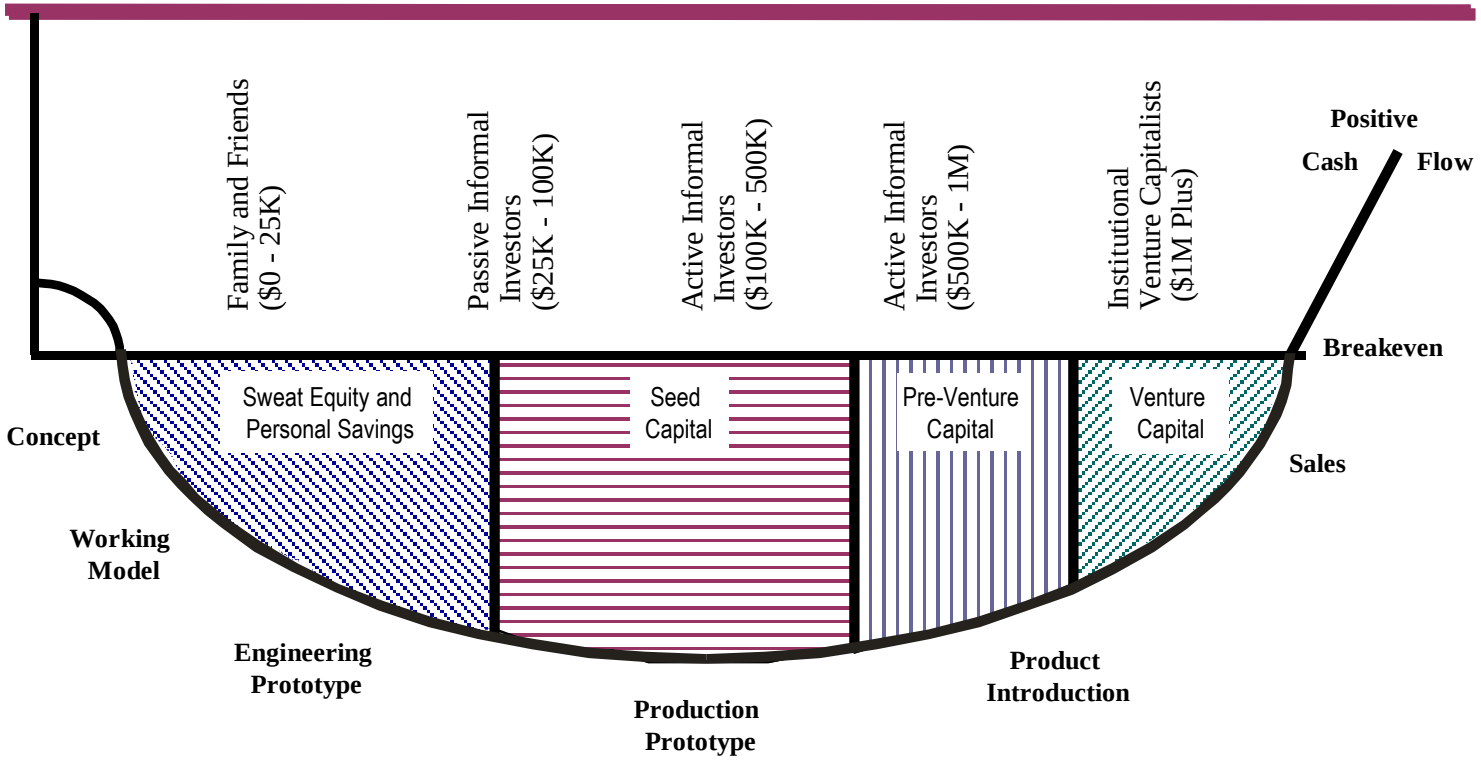
Quinn Williams, Chair, Greenberg Traurig, LLP

Todd Bankofier, Arizona Technology Council
David Beauchamp, Quarles & Brady, Arizona Chamber of Commerce
John Bentley, Grayhawk Venture Partners
Chris Gleeson, Ventana Medical
Jock Holliman, Valley Ventures
Gil Jimenez, Arizona Department of Commerce
Saundra Johnson, Flinn Foundation
Dick Love, TGen
John Mascarenas, Intel Capital
Steve Sanghi, Microchip Technology Inc.
Brian Smith, Dominion Ventures
Jim Strickland, Coronado Venture Fund
Roy Vallee, Avnet
Teree Wasley, Arizona Venture Capital Conference

Capital Formation Objectives

- Encourage more private investors to MAKE capital available to early stage firms.
- Increase the size and number of venture funds located in and investing in Arizona.
- Encourage more university-industry research leading to commercial applications.
- Constitute a Strategic Investment Board to administer programs and provide public accountability.

VALLEY OF DEATH



Capital Formation Recommendations

- **State tax credit to encourage venture investing**
  - Proposed design including rate(s), caps, and eligibility criteria
  - Preferences for funds targeting very early stage or rural companies

- **Formation of Arizona Fund of Funds**
  - Models from other states suggest ways in which $100 m. could be raised with lasting impact on the Arizona venture scene

- **Enhance State R&D tax credit**
  - Further improvements could be made in rates, refundability, credit for university R&D

- **Strategic Investment Board**
  - Accountability and Oversight

Establish an Arizona Small Business Opportunity Program

A State tax credit available to private individuals or

Arizona Corporations doing business in Arizona whom invest in funds in early stage"qualified AZ companies/seed funds with the following characteristics:

- An Arizona headquarters and/or Arizona-resident general or managing partner
- Investment only in early stage Arizona-based businesses in core competency areas identified
- Other areas for investments to qualify selected by SIB
- Credit eligibility of 30%, with higher credit to 35% to promote a seed/pre-seed stage fund in the biosciences; rural Arizona
- Credit to be deferred over 3 years and capped at $20 million

Establish Arizona Venture Capital (Fund of Funds) Program

- **Not a new mechanism, 20 states have some program to encourage venture capital firms to locate/invest in state**

- **50% of Fund from Private Sources**
  - Pension Funds
  - Private Investors
  - Foundations

- **50% of Fund created by State Program**
  - Contingent tax credits to secure loan to fund (Utah/Oklahoma Model)
  - Specific Revenue Source

Potential Sources for a $100 million Fund of Funds Pool

- **Public pension funds**
  - About $30 b in total assets among the majors
  - If they invested 2% in venture capital and just one tenth of that with the Board, that would be $60 million
- **Private pension funds**
  - Hard to say what they would do. They are nearly the most risk-averse of institutional investors
- **University and foundation endowments**
  - A reasonable investment of the asset base statewide might be about $1b
  - Nationally such investors have high allocations to venture capital, but not in Arizona
  - If the pool could reach a 10% allocation and placed a quarter of that with the Board, that raises $25 million
- **Tax Credits – Fixed and Contingent either sale or security device**
- **Private, for-profit investors**

Institutional Investors with a Commitment to Arizona

Foundations, Universities, Corporations, Individuals, Public Pension Funds, Appropriations

Coastal Financial Centers

Advisors to Institutional Investors nationwide, with no regional loyalties

Arizona Fund of Funds

Risk reduction through pooling and diversification

Bay Area Fund D

ARIZONA-BASED FUNDS

- AZ Fund A (new fund)
- AZ Fund B (AZ office of CA firm)
- AZ Fund C (relocation to AZ)

- AZ Co. 1
- AZ Co. 2
- AZ Co. 3
- AZ Co. 4
- Bay Area Co. 5

Hypothetical Distribution of Investments: An Arizona Fund of Funds

Enhance Arizona's R&D Credit

- Arizona's R&D tax credit could be improved by addressing goals that don't require de-linking from federal law and abandoning that simplicity:
  - Altering two-tier structure so incentive does not drop with higher R&D and considering limited refundability
  - Adding a separate, super credit for in-state university R&D – for example, a 10% volume credit on cash expenditures pursuant to a sponsored-research agreement

State R&D Tax Credit: Benchmarking Other States and Countries

- Provide differential rates for basic-research components
  - **Massachusetts** – 15% versus 10% for other R&D
  - **California** – 24% versus 15% for other
- Add-on credits
  - **Arkansas** – 33% credit on all amounts expended on "qualified research programs"
  - **Connecticut** – 25% credit on incremental university R&D over a three-year rolling average
- And consider the generosity of two Canadian provinces
  - **Ontario** – in addition to its refundable 10% credit and "super-allowance deduction" offers 20% *refundable* credit on research at "eligible research institutes" in Ontario

Create a Strategic Investment Board

- **Locale**
  - Have or agree to open a full-time Arizona office staffed by an experienced venture manager
- **Targeting**
  - Committed by charter to place investments in technology fields substantially overlapping those identified by Board (core competencies)
  - One use would be for a Arizona Bio Fund and and a " Pre SEED" Fund
  - University Acceleration Fund<PROTOTYPE>
- **Stage of investment**
  - No fund committed predominantly to later-stage investing should be in the pool
- **Best efforts**
  - Amounts at least equal to the Board's investment should be invested in Arizona businesses
- **Other**
  - Establish special relationships with university technology transfer offices and any early-stage venture funds created under the credit discussed above

Summary

- Increase **size and number of venture funds** in Arizona including those focused on biosciences
- Encourage **private investors** to make more funds available to early stage companies/funds
- Encourage more **university/industry partnerships** through changes to the State's R&D tax credit
- And have a "**Strategic Investment Board**" to guide these investments as to:
  - Focusing on investment opportunities in the fields identified by community leaderships
  - Leaving behind a strengthened private venture-capital investing infrastructure

Success factors

1. Leadership and commitment, by the public, academic and private sectors, is key to developing Arizona's global position, specifically in Bioscience, Advance Communications/IT and Sustainable Systems;

2. Technology commercialization amendment to Arizona's constitution is critical to improve our entrepreneurial business climate and compete with other states;

3. Access to capital and a favorable business climate that supports innovation and technology development are essential to Arizona's global competitiveness in the 21st century;

4. Retention and growth of Arizona's existing technology companies are the foundation on which to diversify Arizona's economic base;

5. World-class research through the pursuit of a national lab is paramount for Arizona's success in discoveries, innovation and technology development;

6. An Arizona office in Washington D.C. is critical to securing federal funding to build the infrastructure of Arizona's knowledge-based economy;

7. Innovation and technology competitiveness in Arizona must be aggressively communicated to the world to brand the State as a recognized global leader;

8. Strategic proximity to Mexico offers a unique leadership opportunity to build global markets that benefit Arizona's economy;

9. Knowledge leaders and highly skilled talent, through improved education at all levels, will be a determining factor in Arizona's effort to successfully compete in the global knowledge-based economy;

10. Innovation and technology development scorecard will serve both as a measurement tool for Arizona and an instrument promoting shared accountability between the private and public sectors.